

ABSTRACT

A structure for producing a localized light source in a medium is provided. The structure includes a source generating incident light, a  
5 surface-plasmon-supporting layer, and means for transmitting and localizing plasmons between the surface-plasmon-supporting layer and the medium. The transmitter-localizer means includes between the surface-plasmon-supporting layer and the medium a discontinuity for providing a localized electromagnetic field deviation and a plasmon-transmitting interface with  
10 predetermined electromagnetic properties at the medium. The incident light excites a surface plasmon in the surface-plasmon-supporting layer, which plasmon in turn produces the localized light source at the plasmon-transmitting interface by localizing the energy of the surface plasmon.